RUSSIAN HELICOPTERS | ULAN-UDE AVIATION PLANT

OFFSHORE HELICOPTER
Mi-171A3

for flights to offshore drilling platforms

Key advantages

- Total compliance to AP29, CS-29 adm. 6 and IOGP rep.590
- Up-to-date safety systems
- Instrument landing on offshore drilling platforms
- High latitude flights
- High reliability
- Ease of operation and maintenance
- Operation without overhauls

Application variants

- Offshore transportation
- Passengers and cargoes carrying
- Search and rescue operations
- Medevac and CPR
- Patrolling and monitoring territories

A and B Categories Certificate as per AP-29 and CS-29

РОССИЙСКАЯ ФЕДЕРАЦИЯ
THE RUSSIAN FEDERATION

МИНИСТЕРСТВО ТРАНСПОРТА РОССИЙСКОЙ ФЕДЕРАЦИИ
MINISTRY OF TRANSPORT OF THE RUSSIAN FEDERATION

ФЕДЕРАЛЬНОЕ АГЕНТСТВО ВОЗДУШНОГО ТРАНСПОРТА
FEDERAL AIR TRANSPORT AGENCY

СЕРТИФИКАТ ТИПА
TYPE CERTIFICATE

№ FATA-02023R

ТИП / *TYPE*	Вертолет Ми-171А / *Helicopter Mi-171A*
НАСТОЯЩИЙ СЕРТИФИКАТ ВЫДАН / *THIS CERTIFICATE ISSUED TO*	АО «НЦВ Миль и Камов» / *Joint Stock Company «National helicopter center Mil&Kamov»*
ГОСУДАРСТВО РАЗРАБОТЧИКА / *STATE OF DESIGN*	Российская Федерация / *The Russian Federation*
МОДЕЛИ / *MODELS*	Ми-171А, Ми-171А1, Ми-171А2, Ми-171А3 / *Mi-171A, Mi-171A1, Mi-171A2, Mi-171A3*

УДОСТОВЕРЯЕТ, ЧТО ТИПОВАЯ КОНСТРУКЦИЯ УКАЗАННОГО ИЗДЕЛИЯ СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ РАСПРОСТРАНЯЕМОГО НА НЕГО СЕРТИФИКАЦИОННОГО БАЗИСА

CERTIFIES THAT THE ABOVE-MENTIONED PRODUCT TYPE DESIGN MEETS ITS APPLICABLE CERTIFICATION BASIS REQUIREMENTS

ОПИСАНИЕ ТИПОВОЙ КОНСТРУКЦИИ И СЕРТИФИКАЦИОННОГО БАЗИСА, ОСНОВНЫЕ ЭКСПЛУАТАЦИОННЫЕ ОГРАНИЧЕНИЯ И ХАРАКТЕРИСТИКИ ИЗДЕЛИЯ СОДЕРЖАТСЯ В КАРТЕ ДАННЫХ СЕРТИФИКАТА ТИПА № FATA-02023R, КОТОРАЯ ЯВЛЯЕТСЯ НЕОТЪЕМЛЕМОЙ ЧАСТЬЮ НАСТОЯЩЕГО СЕРТИФИКАТА

THE DESCRIPTION OF TYPE DESIGN AND CERTIFICATION BASIS, BASIC OPERATING LIMITATIONS AND THE PRODUCT PERFORMANCE ARE PRESENTED IN THE TYPE CERTIFICATE DATA SHEET № FATA-02023R WHICH IS AN INTEGRAL PART OF THIS TYPE CERTIFICATE

Должность: / *Title*: Заместитель руководителя Росавиации / *DEPUTY DIRECTOR GENERAL*

Подпись: / *Signature*: В.В. Потешкин / *V. Poteshkin*

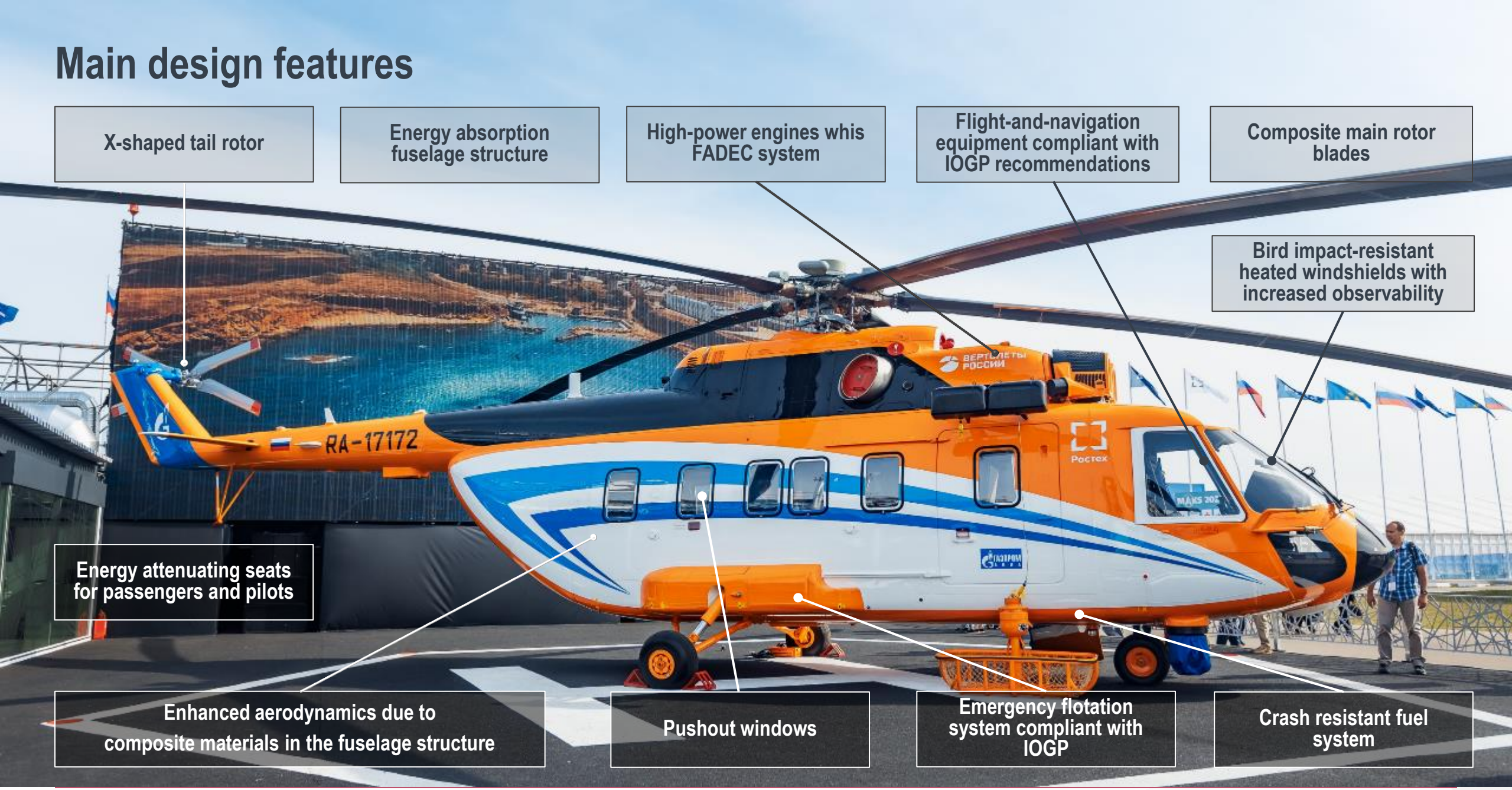
Дата первоначальной сертификации / *Date of initial certification*: 03.06.1997 / *03.06.1997*

28.12.2022

Compliance with IOGP report 590 recommendations

Minimum requirements	
Seating positions in front of windows	✓
Push out windows with an emergency exit function	✓
Emergency floatation system with automatic and manual activation	✓
External rafts with a capacity of +50% to the number of passengers and crew	✓
HEELS-type system (illumination of escape passage in case of water contact in a water or smoke filled cabin)	✓
EGPWS/TAWS-type system (ground proximity warning – SRPBZ)	✓
Weather radar with color indicator and search function	✓
Automatically Deployable Emergency Locator Transponder (ADELT)	✓
Underwater locator beacon	✓
Anti-icing system	✓
Requirements recommended in more than one edition of the IOGP	
VHM+ HUMS-type system (prediction and technical condition monitoring system)	✓
TCAS (Traffic Collision Avoidance System)	✓

Main design features



- X-shaped tail rotor
- Energy absorption fuselage structure
- High-power engines whis FADEC system
- Flight-and-navigation equipment compliant with IOGP recommendations
- Composite main rotor blades
- Bird impact-resistant heated windshields with increased observability
- Energy attenuating seats for passengers and pilots
- Enhanced aerodynamics due to composite materials in the fuselage structure
- Pushout windows
- Emergency flotation system compliant with IOGP
- Crash resistant fuel system

Flight performances

Maximum take-off weight	13,500 kg
Cargo weight inside cargo cabin	4,000 kg
Cargo weight on external sling	5,000 kg
Hover ceiling / landing pad maximum height	4,000 m
Service ceiling	6,000 m
Flight range with cargo of 2,000 kg (en-route fuel reserve for 20 min. flight), not less	820 km
Offshore modification flight range:	
transportation of 16 passengers, (en-route fuel reserve for 30 min. flight, +10% remaining fuel), not less	600 km
transportation of 19 passengers, (en-route fuel reserve for 30 min. flight, +10% remaining fuel), not less	480 km
Maximum speed, not less	280 km/h
Cruising speed, not less	250 km/h

Assigned service life and TBO of major components

Description	TBO Flight hours / years	Assigned service life Flight hours / years
Fuselage	-	18,000 / -
Engines	3,000 / 12	9,000 / -
Auxiliary power unit	1,000 / 12	3,000 / -
Main rotor blades	-	9,000 / 12
Main rotor hub	1,500 / 8	6,000 / -
Main gear box	3,000/ 10	9,000 / -

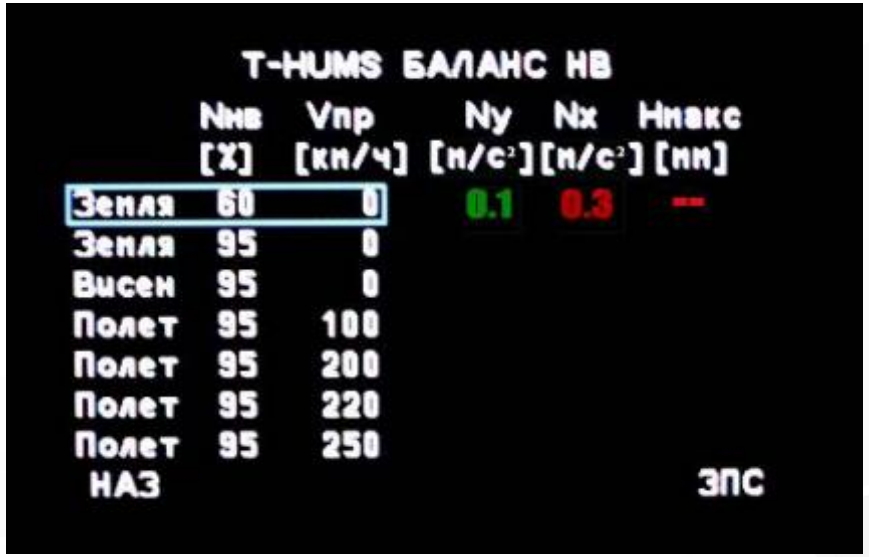
The table shows target values

High level of flight safety

VK-2500PS-03 Engines with enhanced power at emergency mode	▪ Increased power at cruise and nominal flight modes ▪ Continuous flight with OEI within 60 minutes ▪ Continuous take-off with OEI ▪ Digital engine control system of FADEC type ▪ Anti-surge control ▪ PALL is a multi-cyclone type EAPS with a higher degree of purification
Composite main rotor blades and X-shaped tail rotor	▪ Increased lift and thrust/weight ratio (up to 700 kg) ▪ Increased directional control efficiency, maneuverability and side wind resistance
Energy absorption fuselage structure	▪ Ensuring safety during overloads up to 20g
Dual fuel and hydraulic systems	▪ Separate engine fuel supply ▪ Simultaneous operation of 2 fully independent hydraulic systems ▪ Dual-chamber actuators ▪ Wearproof Teflon hoses with extended service life
SOKD objective control and diagnostic systems (HUMS function)	▪ Prediction of malfunctions of helicopter major components and systems ▪ Continuous health monitoring of the helicopter systems
Integrated flight and navigation suite with digital autopilot	▪ Indication of information and alarm signaling on obstacles (EGPWS, TCAS-1 V, etc.) ▪ Safety in manual, automatic, combined control modes ▪ Improved stability and controllability of the helicopter ▪ Enhanced situational awareness ▪ Reduced burden on the crew

Efficient operation and maintenance system

- Maintenance without overhauls
- Reduced scope of scheduled maintenance
- Quick diagnostics and troubleshooting due to use of NASKD-200MB Multifunctional Testing System
- Failure prediction
- Increased service life of units and components

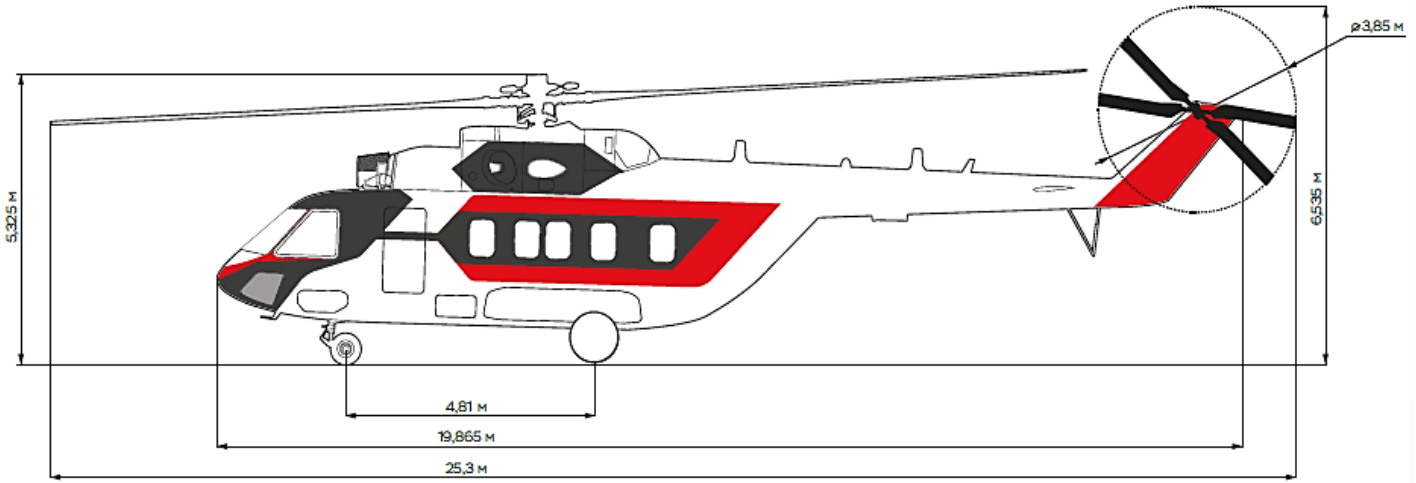


Helicopter baseline configuration

AIRFRAME

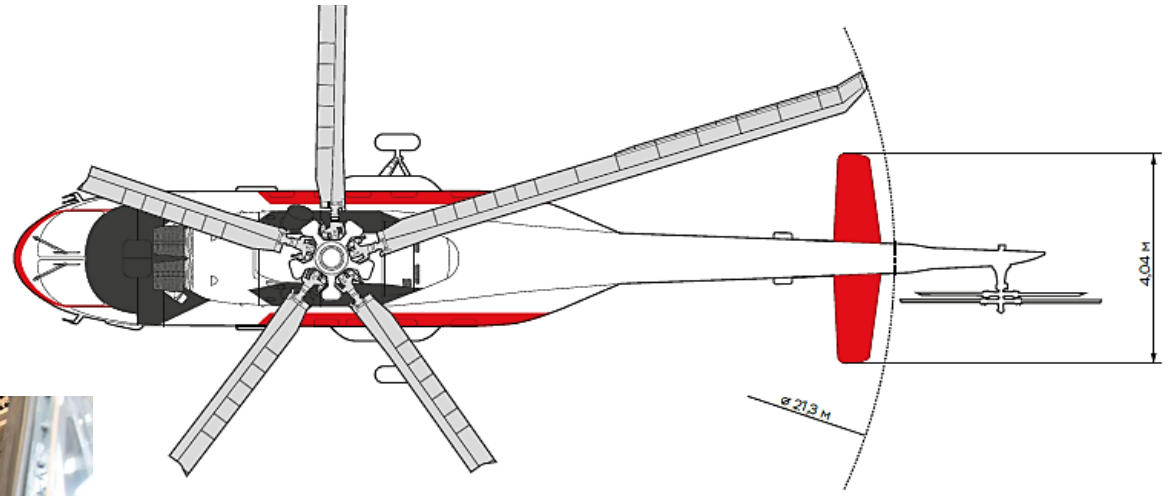
Fuselage

- Energy absorption fuselage structure (up to 20 g)
- Airframe enhanced aerodynamics
- Crash resistant fuel system
- Pushout windows
- RH sliding door, LH airstair
- Bird impact-resistant heated windshields with increased observability
- Heating and air conditioning system placed in the helicopter floor



Landing Gear

- Landing gear with shock struts
- Running takeoff capability
- Brake system
- Capability to taxi and tow the helicopter on ground

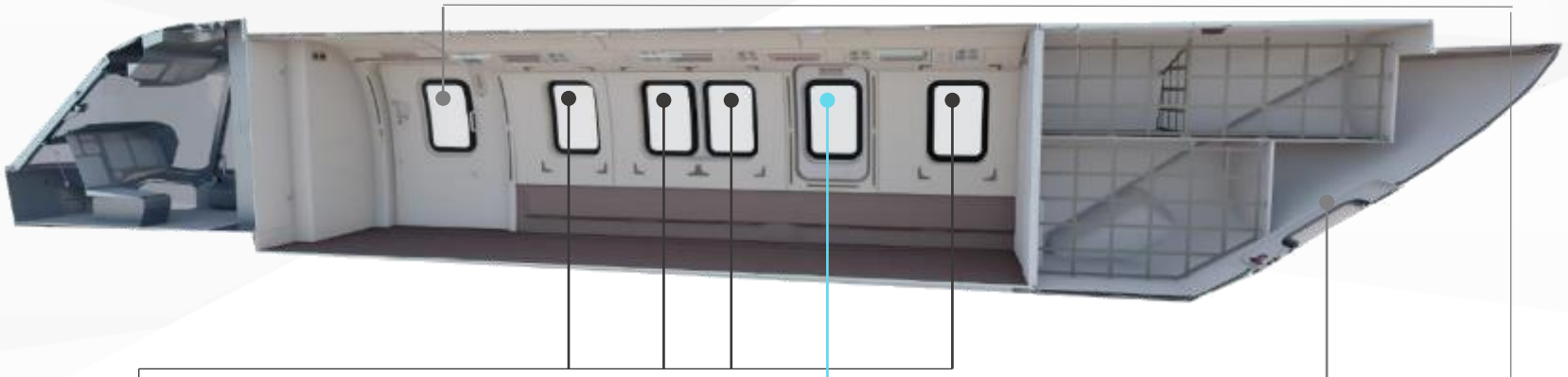


Aircrew energy-attenuating seats

- Adjustable seats
- Four-point safety harnesses
- Manual and automatic lock of shoulder harness

Fuselage

Emergency exits



The windows are type IV emergency exits with a structurally possible maximum size and provide emergency escape of passengers from the cabin

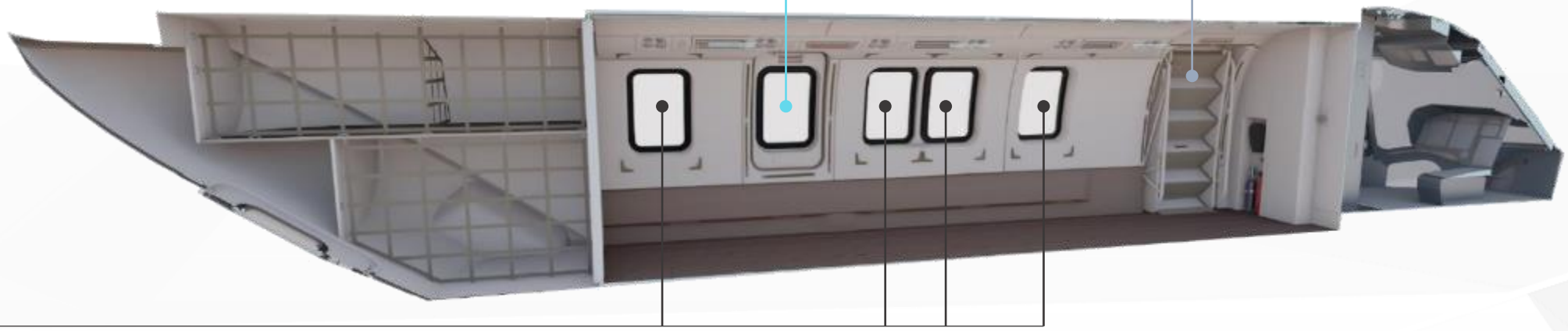
8 type IV exits (485 x 676 mm)

2 type III exits (600 x 1,000 mm)

1 type III exit (514 x 925 mm)

1 type I exit (1,248 x 1,560 mm)

1 type I exit (810 x 1,560 mm)



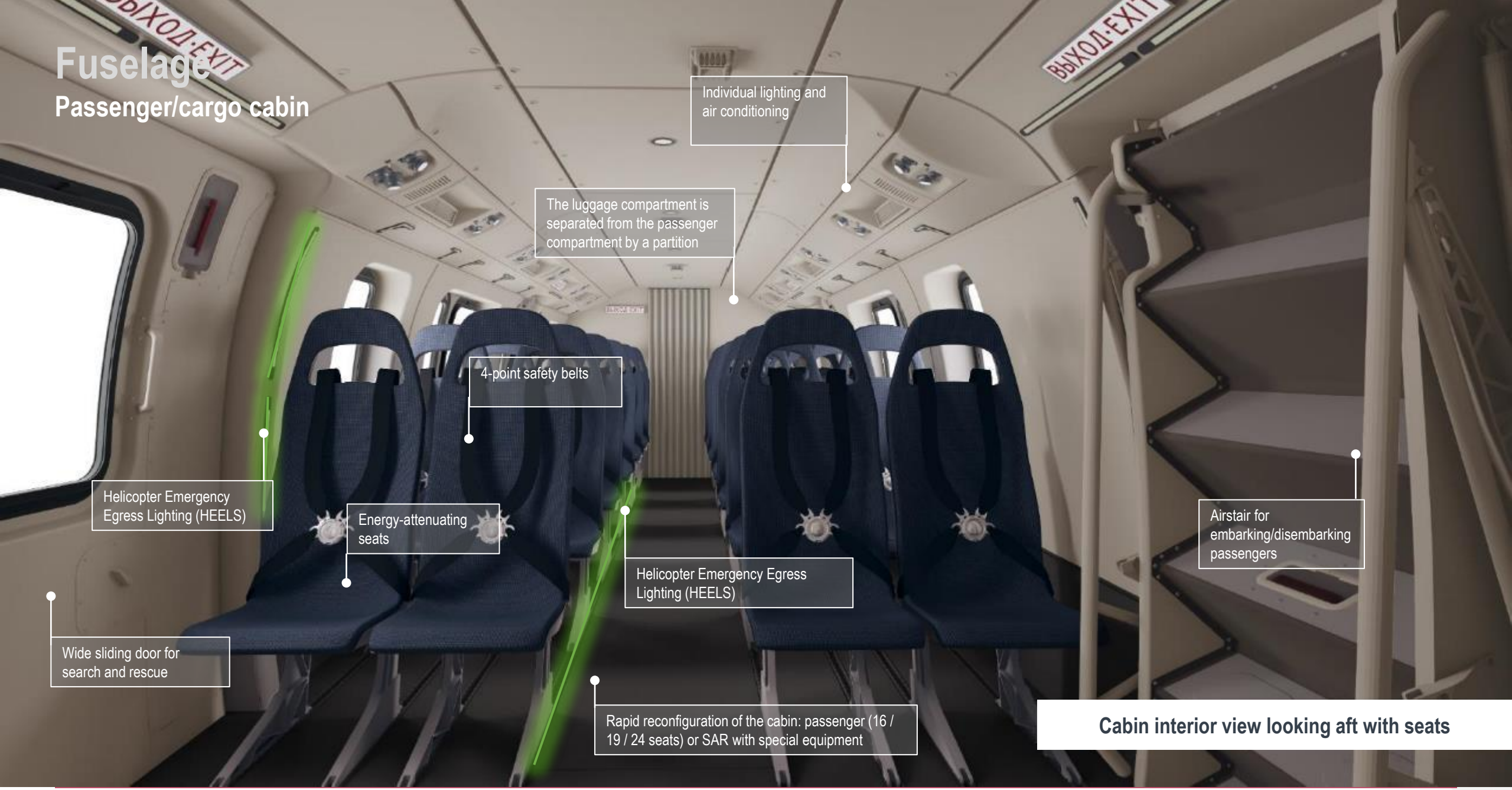
Fuselage

Passenger/cargo cabin

- Transportation of up to 24 passengers over land and water
- Operator’s automated workstation
- Transportation of up to 4,000 kg inside cargo cabin
- Cargo/passenger cabin volume 24.3 м³
- 4-point safety harness energy-attenuating passenger seats
- Personal safety devices
- Spacious luggage compartment separated from the passenger cabin

Fuselage

Passenger/cargo cabin



Cabin interior view looking aft with seats

Power plant

VK-2500PS-03 Engines

- Emergency power rating up to 2,700 h.p.
- Improved high-altitude and climatic performance
- Horizontal flight and continued take-off with OEI within 60 minutes
- FADEC Digital Engine Control System
- Maintaining the engine RPM in automatic mode on various flight modes
- Anti-surge Control

APU TA-14-130-08

- Start altitude up to 5,000 m
- Continuous operation time is up to 5 hours
- Powerful generator - 30kW
- Efficient fuel consumption

DPD

- High purification rate

Rotor System

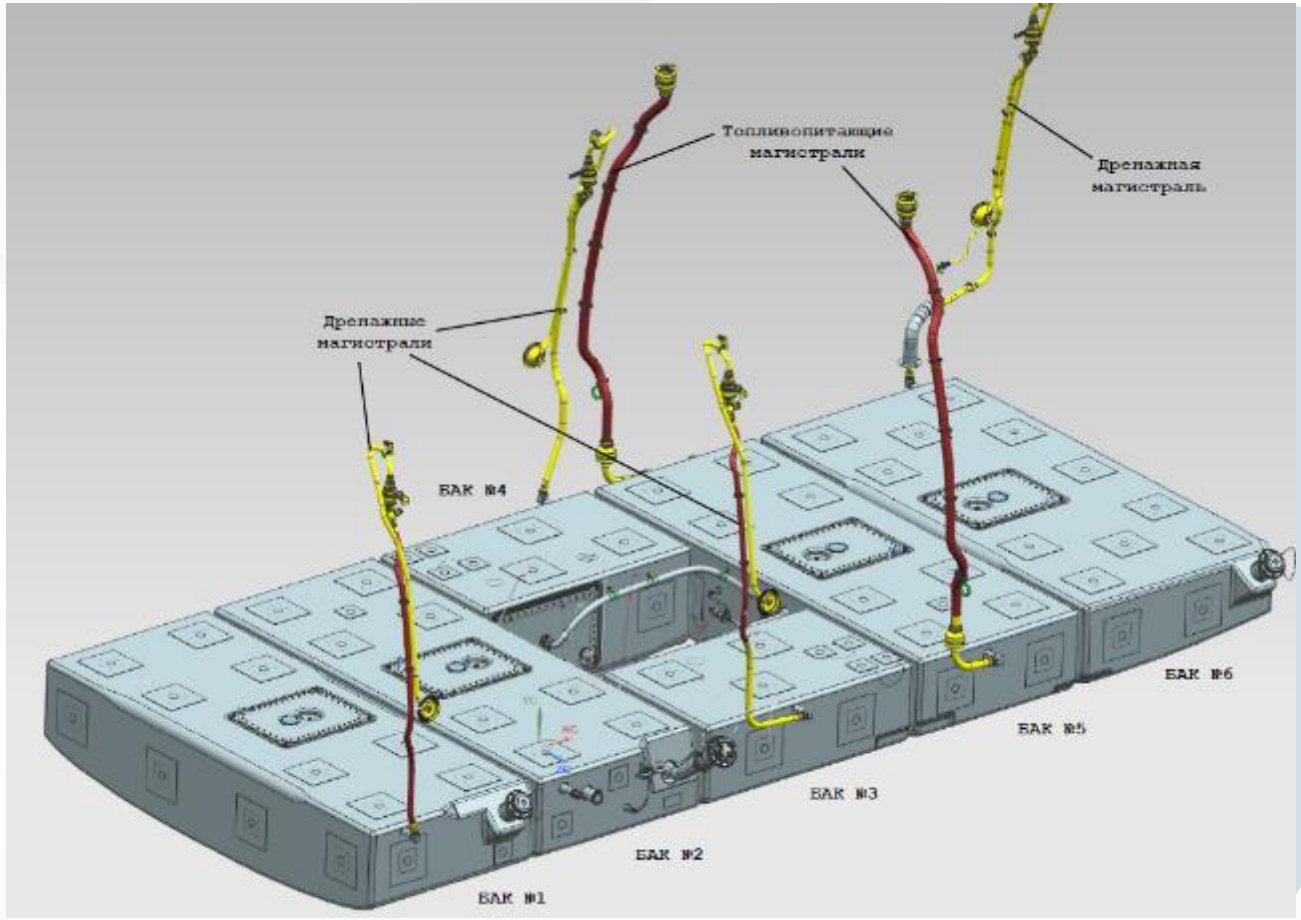
Composite MR blades

- High efficiency when operated in high mountains
- Increase in main rotor thrust
- Increased speed
- Enhanced maneuverability
- Improved carrying capacity
- Low corrosibility

X-shaped TR

- Improved yaw stability
- Increased crosswind resistance
- Reduced noise level

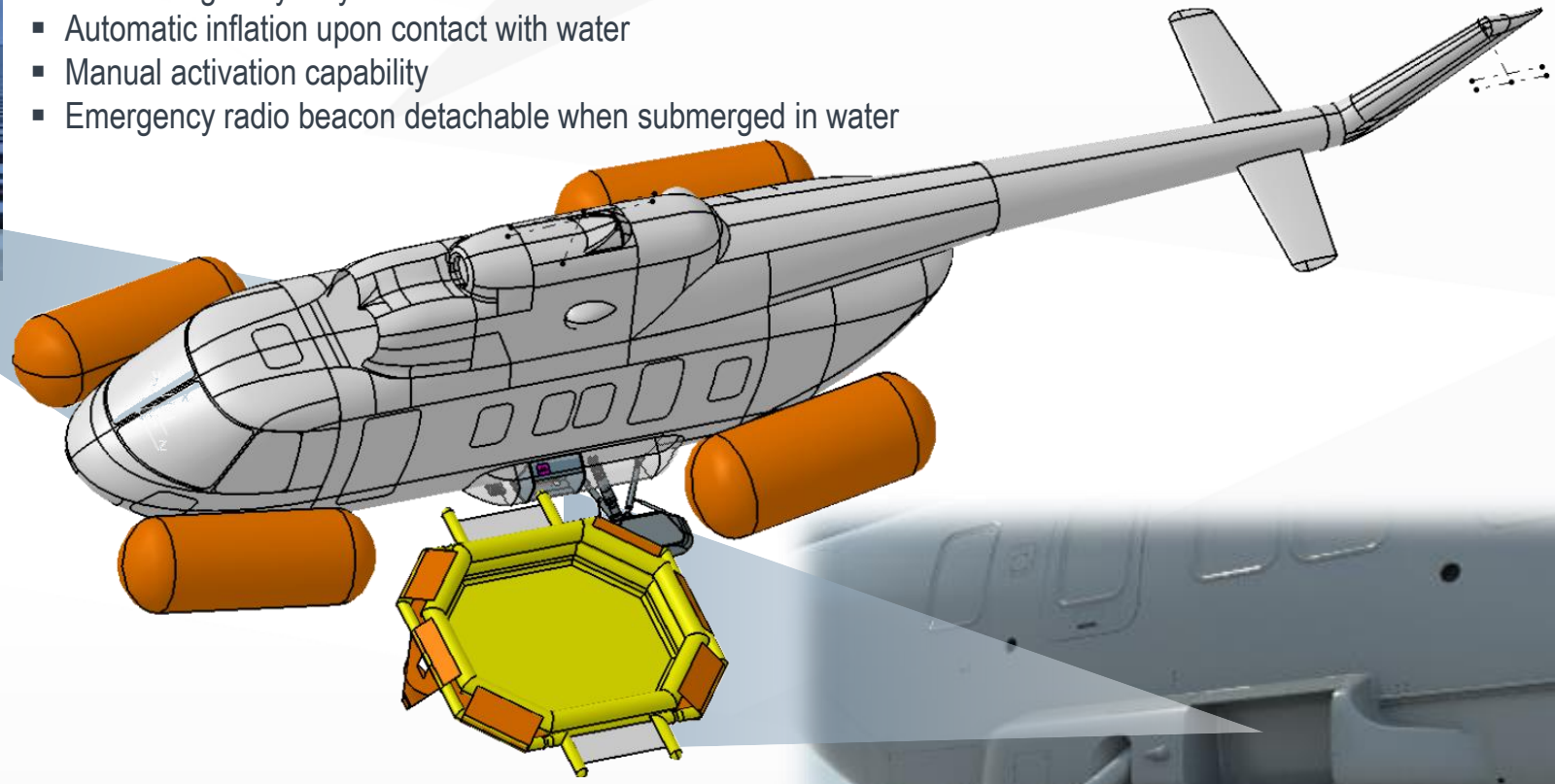
Crash resistant fuel system



- Independent feeding of each engine with even distribution of fuel supply to the engine
- Pressure hot-refueling system
- Fuel supply to both engines in case of failure of one booster pump
- Fuel distribution system during helicopter refueling

Emergency Flotation System

- Providing buoyancy in water surface waves up to 5 points up to 30 minutes
- 3-section front floats
- 4-section rear floats
- Maintaining buoyancy with loss of 1 float
- Automatic inflation upon contact with water
- Manual activation capability
- Emergency radio beacon detachable when submerged in water



Emergency life rafts

- 2 external life rafts with capacity of up to 27 people each
- Embedded emergency location transmitter
- Survival kits
- ETSO 2C505 and EU AIR OPS-compliant raft configuration

Optional equipment

Cargo winch

Dual (redundant) winch with lifting capacity up to 300 kg of high reliability for rapid lifting of people and cargo aboard

- Capability to use various rescue equipment
- Lifting speed of people and loads - 0.6 m/s
- Descent speed of loads - 1.2 m/s
- Winch cable length - 85 m
- Winch weight is not more than 39.5 kg each
- Winch remote control from the transport cabin
- Cargo emergency release capability

Rescue equipment configuration

- Cradle
- Universal lifting chair
- Rescuer belt
- Life belt for evacuees
- Hammock
- Lift device

TSL-1600 Search light

- Search operation at night time
- Illuminating range - 1,000 m

SGU-600 Signal loudspeaker device

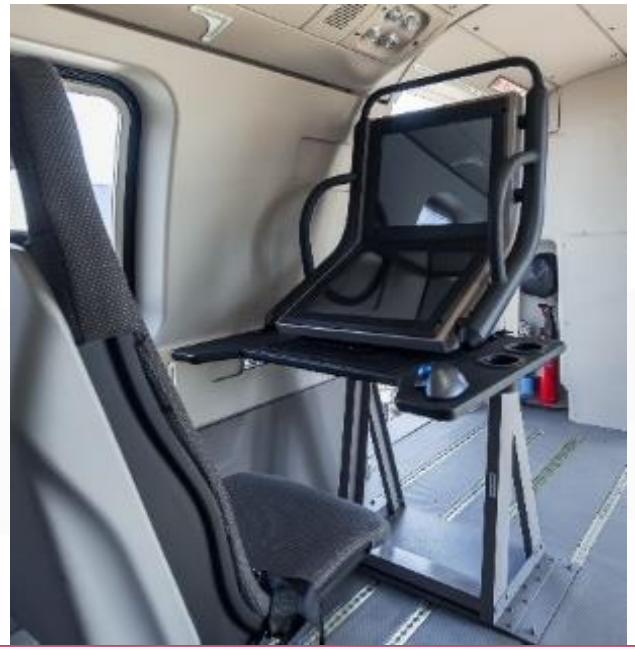
- Warning and issuing commands by a helicopter crew via external acoustic systems during SAR and fire fighting operations

Gyro-stabilized optoelectronic system

- Dual circuit stabilization system
- Round-the-clock detection, recognition, capture and automatic target tracking
- Measurement of the slant range distance to the object in VFR and IFR weather conditions.
- Image and information output to the operator's console and to the cockpit indicators
- Cockpit operated capability
- Capable of transmitting information to a mobile ground control station

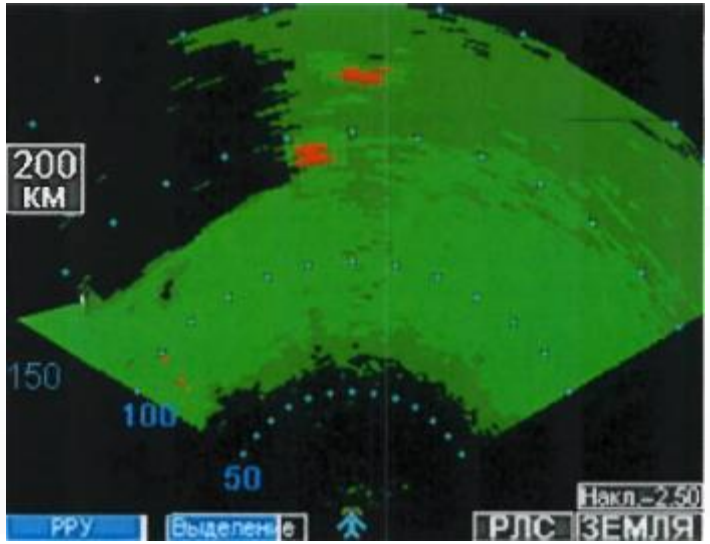
Performances

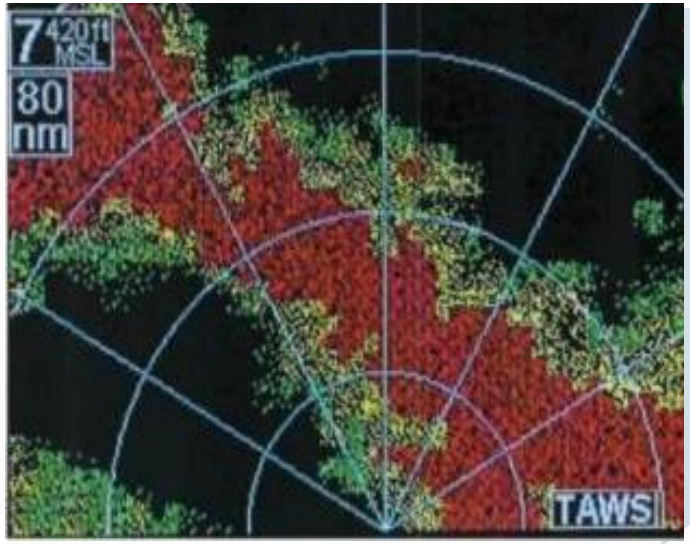
- Object detection range:
  - TV camera – 10 km
  - IR camera – 10 km
- Video resolution - not less 1920×1080
- Azimuth, degrees - n×360 (unrestricted rotation)
- Pitch, degrees - not less from +10 to -110



Radar

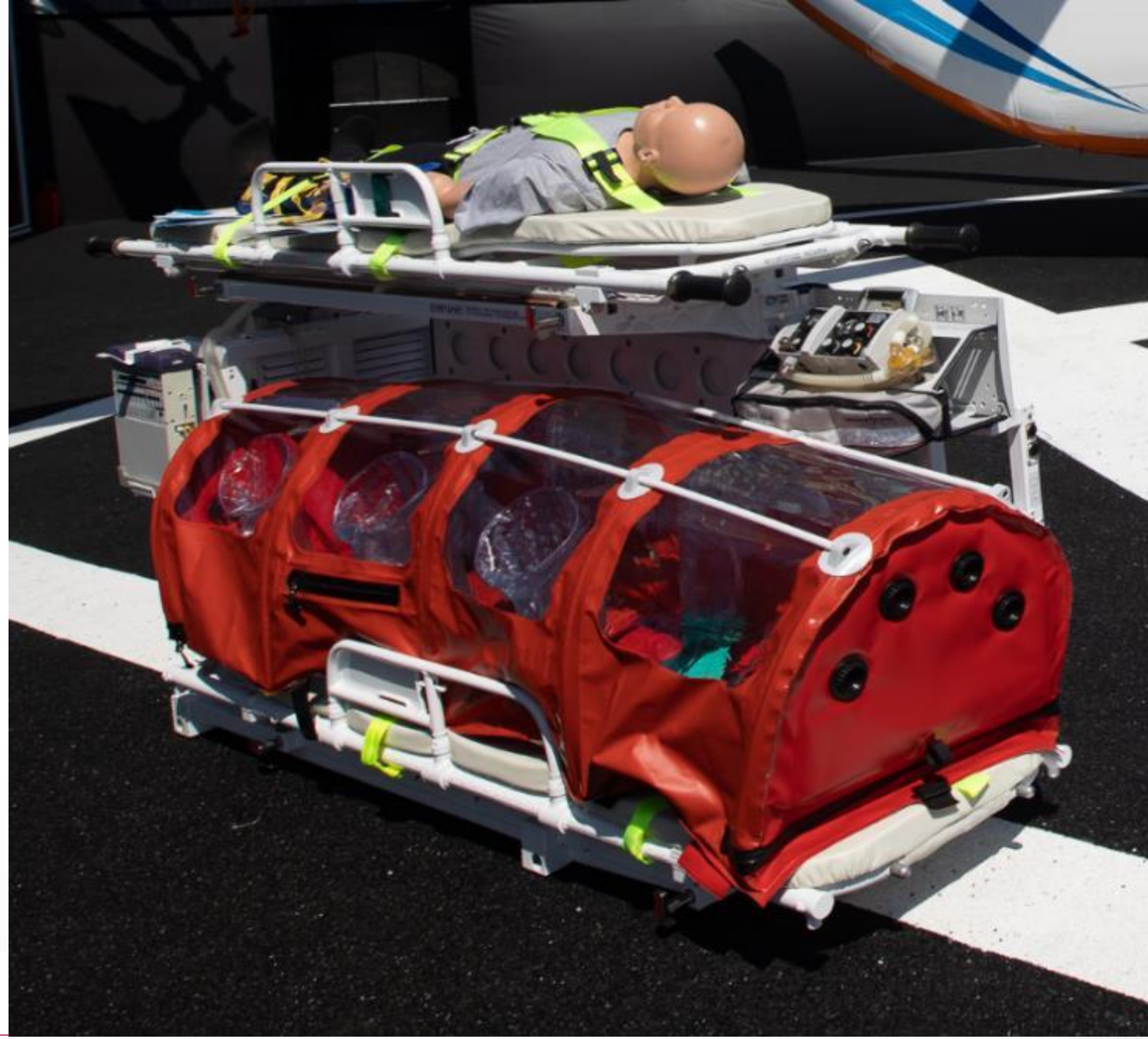
- Expanded area of antenna array
- Scanning and presentation of horizontal and vertical profile of moisture targets on display
- Providing radar imaging of underlying surface





Medical module

- Placement of up to two casualties on one module
- Possibility to install up to 2 modules (evacuation of up to 4 casualties)
- Provision of first aid medical care using medical equipment (including a full range of intensive care)
- Dismantling of easily removable modules in a short time (up to 20 min)
- Wide range of medical equipment (defibrillator, electrocardiograph, aspirators, lung ventilator, pulse oximeter, etc.)



External cargo sling

- Cargo capacity up to 5,000 kg
- Weight measurement system
- Cable length up to 33 m
- Capability to use synthetic lanyards
- Capability to carry bulky cargo

Flight-and-navigation equipment

- Digital autopilot with backup function
- Piloting by two crew members
- NSI-2000MTG Integrated navigation system
- TCAS-1 System
- Integrated system of standby instruments
- Radio communication facilities suite with a wide range of frequencies (VHF, HF)
- Interactive operational documentation in electronic form in a pilot's tablet
- Flight safety in manual, automatic, combined control modes
- Precise approach
- Completely automatic flight
- RPA-500 Built-in direction finder

After-sales service

JSC Russian Helicopters and JSC U-UAP provide:

- Warranty and post-warranty service
- Supply of spare parts, tools, and ground support equipment
- Overhaul and reconditioning repair
- Helicopter upgrade

Training and retraining of flight and maintenance personnel

- Certified aviation training center
- Helicopter training simulator for practicing piloting skills
- State-of-the-art computer technologies
- High-quality visual aids
- Teachers and instructors